TS256MDR72V4S

184Pin DDR400 Registered DIMM
2GB with 128Mx4 CL3

Description

The TS256MDR72V4S is a 256M x 72bits Double Data Rate SDRAM high-density for DDR400. The TS256MDR72V4S consists of 36pcs CMOS 128Mx4 bits Double Data Rate SDRAMs in 60 ball FBGA packages, 2pcs drive ICs for input control signal, 1pcs PLL, and a 2048 bits serial EEPROM on a 184-pin printed circuit board. The TS256MDR72V4S is a Dual In-Line Memory Module and is intended for mounting into 184-pin edge connector sockets.

Synchronous design allows precise cycle control with the use of system clock. Data I/O transactions are possible on both edges of DQS. Range of operation frequencies, programmable latencies allow the same device to be useful for a variety of high bandwidth, high performance memory system applications.

Features

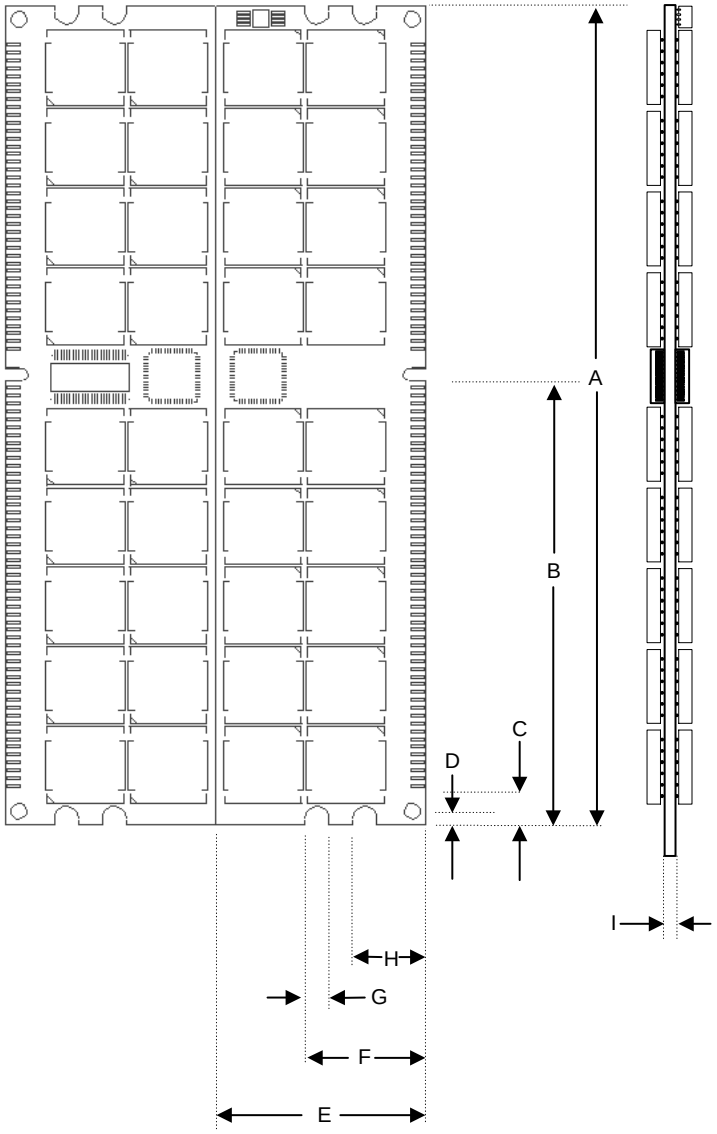
- Max clock Freq: 200MHZ.
- Burst Mode Operation.
- Auto and Self Refresh.
- All inputs except data & DM are sampled at the positive going edge of the system clock (ck).
- Data I/O transactions on both edge of data strobe.
- Edge aligned data output, center aligned data input.
- Serial Presence Detect (SPD) with serial EEPROM
- SSTL-2 compatible inputs and outputs.
- Single 2.6V ± 0.1V power supply.
- MRS cycle with address key programs.

  CAS Latency (Access from column address): 3

  Burst Length (2,4,8)

  Data Sequence (Sequential & Interleave)

Placement



PCB: 09-2200

Dimensions

Side	Millimeters	Inches
A	133.35±0.20	5.250±0.008
B	72.39	2.850
C	6.35	0.250
D	2.20	0.087
E	34.29±0.20	1.35±0.008
F	19.80	0.779
G	4.00	0.157
H	12.00	0.472
I	1.27±0.10	0.050±0.004

Pin Identification

Symbol	Function
SA0~SA12, SBA0, SBA1	Address input
SDQ0~SDQ63	Data Input / Output.
SCB0~SCB7	Check bit
SDQS0~SDQS8, SDM0~SDM8	Data strobe input/output
CK0, /CK0	Clock Input.
SCKE0, SCKE1	Clock Enable Input.
/SCS0, /SCS1	Chip Select Input.
/SRAS	Row Address Strobe
/SCAS	Column Address Strobe
/SWE	Write Enable
VDD	+2.5 Voltage power supply
VDDQ	+2.5 Voltage Power Supply for DQS
VREF	Power Supply for Reference
VDDSPD	+2.5 Voltage Serial EEPROM Power Supply
EA0~EA2	Address in EEPROM
SCL	Serial PD Clock
SDA	Serial PD Add/Data input/output
VDDID	VDD Identification Flag
VSS	Ground
/RESET	Reset enable
NC	No Connection

Pinouts:

Pin No	Pin Name	Pin No	Pin Name	Pin No	Pin Name	Pin No	Pin Name
01	VREF	47	SDQS8	93	VSS	139	VSS
02	SDQ0	48	SA0	94	SDQ4	140	SDM8
03	VSS	49	SCB2	95	SDQ5	141	SA10
04	SDQ1	50	VSS	96	VDDQ	142	SCB6
05	SDQS0	51	SCB3	97	SDM0	143	VDDQ
06	SDQ2	52	SBA1	98	SDQ6	144	SCB7
07	VDD	53	SDQ32	99	SDQ7	145	VSS
08	SDQ3	54	VDDQ	100	VSS	146	SDQ36
09	NC	55	SDQ33	101	NC	147	SDQ37
10	/RESET	56	SDQS4	102	NC	148	VDD
11	VSS	57	SDQ34	103	NC	149	SDM4
12	SDQ8	58	VSS	104	VDDQ	150	SDQ38
13	SDQ9	59	SBA0	105	SDQ12	151	SDQ39
14	SDQS1	60	SDQ35	106	SDQ13	152	VSS
15	VDDQ	61	SDQ40	107	SDM1	153	SDQ44
16	*CK1	62	VDDQ	108	VDD	154	/SRAS
17	*/CK1	63	/SWE	109	SDQ14	155	SDQ45
18	VSS	64	SDQ41	110	SDQ15	156	VDDQ
19	SDQ10	65	/SCAS	111	SCKE1	157	/SCS0
20	SDQ11	66	VSS	112	VDDQ	158	/SCS1
21	SCKE0	67	SDQS5	113	NC	159	SDM5
22	VDDQ	68	SDQ42	114	SDQ20	160	VSS
23	SDQ16	69	SDQ43	115	SA12	161	SDQ46
24	SDQ17	70	VDD	116	VSS	162	SDQ47
25	SDQS2	71	*/SCS2	117	SDQ21	163	NC
26	VSS	72	SDQ48	118	SA11	164	VDDQ
27	SA9	73	SDQ49	119	SDM2	165	SDQ52
28	SDQ18	74	VSS	120	VDD	166	SDQ53
29	SA7	75	*/CK2	121	SDQ22	167	NC
30	VDDQ	76	*CK2	122	SA8	168	VDD
31	SDQ19	77	VDDQ	123	SDQ23	169	SDM6
32	SA5	78	SDQS6	124	VSS	170	SDQ54
33	SDQ24	79	SDQ50	125	SA6	171	SDQ55
34	VSS	80	SDQ51	126	SDQ28	172	VDDQ
35	SDQ25	81	VSS	127	SDQ29	173	NC
36	SDQS3	82	VDDID	128	VDDQ	174	SDQ60
37	SA4	83	SDQ56	129	SDM3	175	SDQ61
38	VDD	84	SDQ57	130	SA3	176	VSS
39	SDQ26	85	VDD	131	SDQ30	177	SDM7
40	SDQ27	86	SDQS7	132	VSS	178	SDQ62
41	SA2	87	SDQ58	133	SDQ31	179	SDQ63
42	VSS	88	SDQ59	134	SCB4	180	VDDQ
43	SA1	89	VSS	135	SCB5	181	EA0
44	SCB0	90	NC	136	VDDQ	182	EA1
45	SCB1	91	SDA	137	CK0	183	EA2
46	VDD	92	SCL	138	/CK0	184	VDDSPD